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# Interoperability Overview

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# Agenda



**Overview - Lynne Case (30 min.)**

**Advertising Service CSCI - Thu Vu (1 hour)**

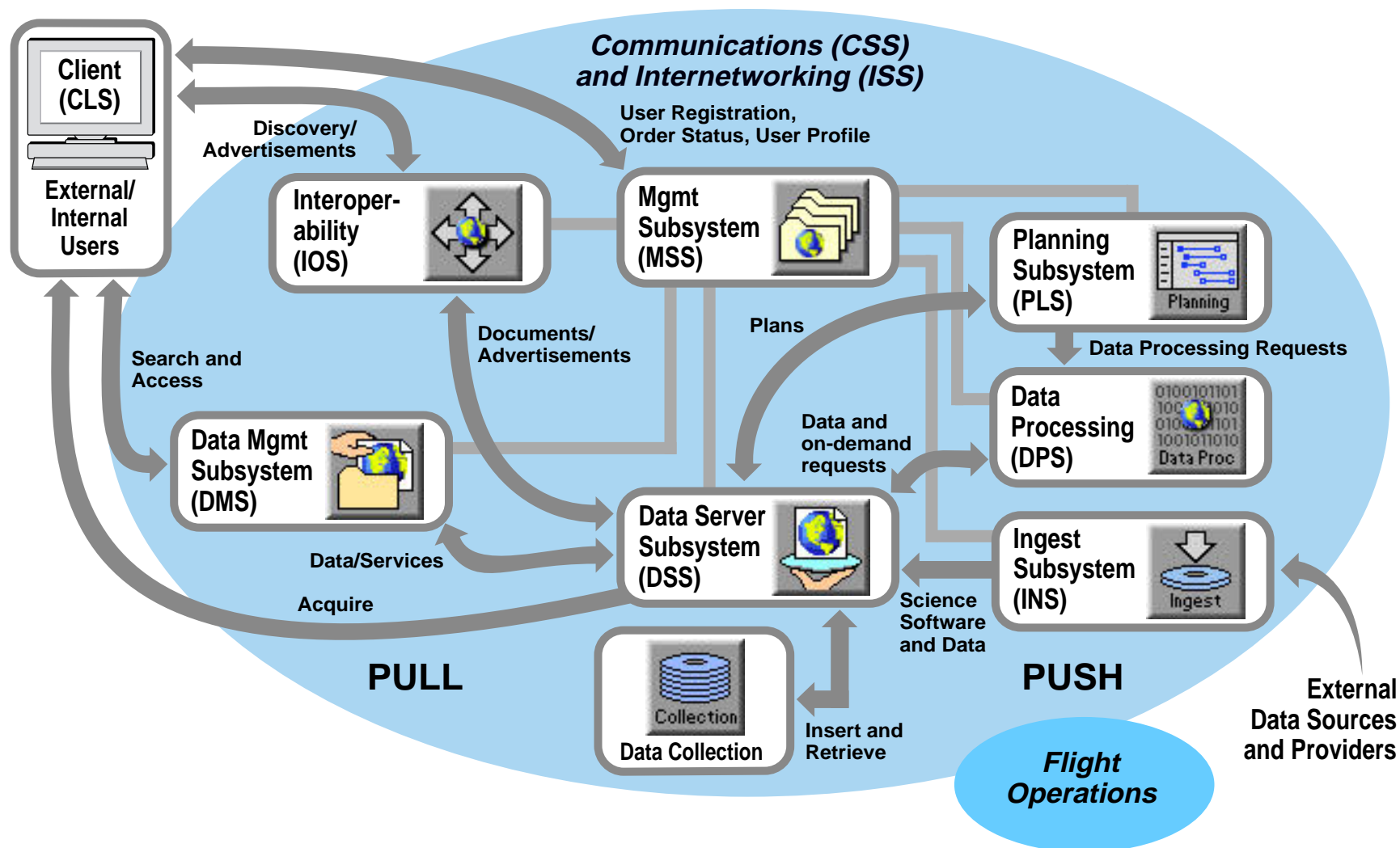
**Advertising External Data Providers - Lynne Case (30 min.)**

# Subsystem Overview



- **ECS context**
- **Driving Requirements**
- **HW and SW Architecture**
- **COTS selections**
- **IDR & workshop issues workoff**
- **305 Errata**

# ECS Context



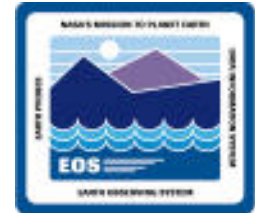


# Driving Requirements

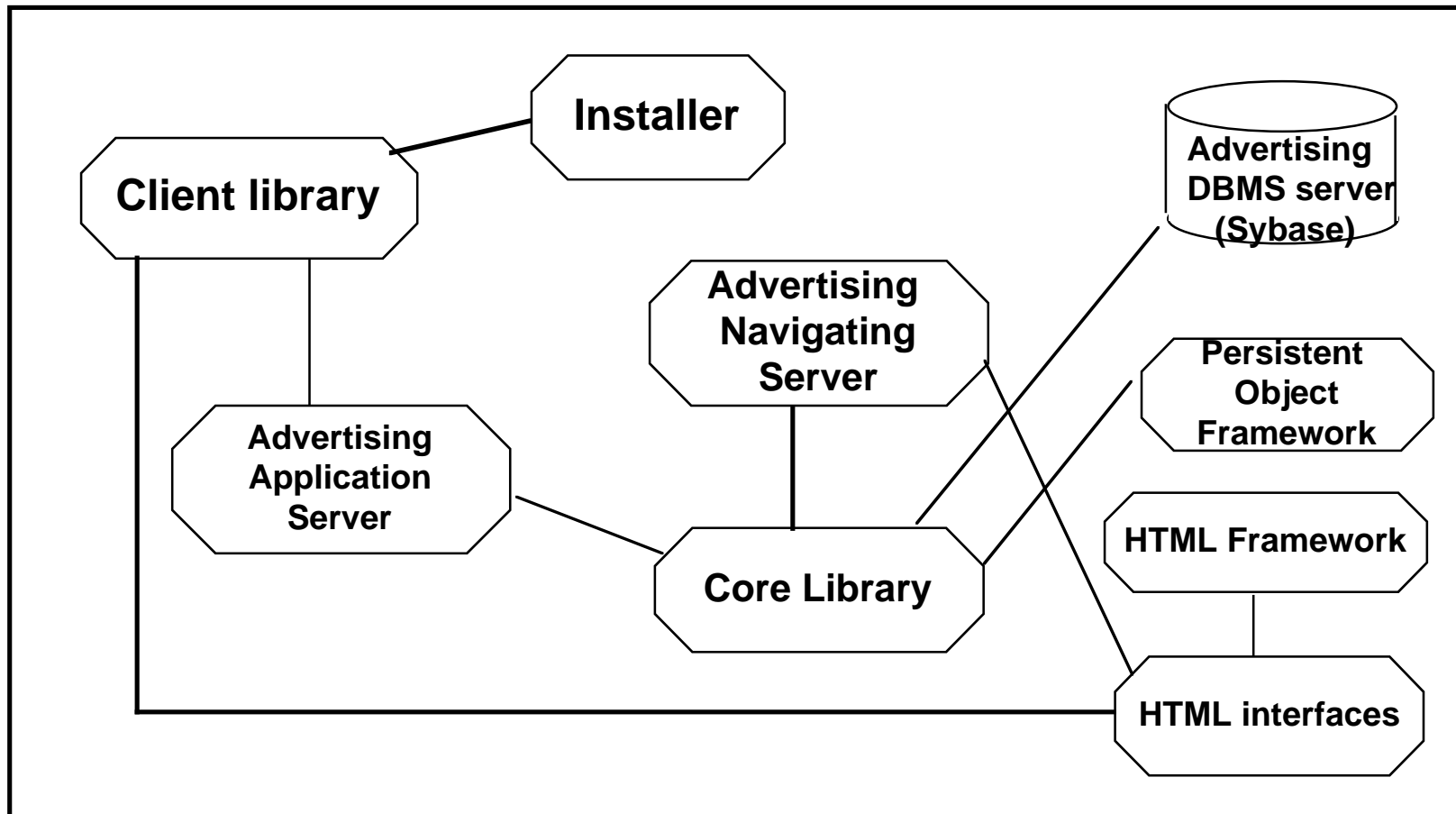
## Advertising Service (ADSRV) CSCI - 305-CD-022-002 Section 4

- Access to both ECS advertisements (product, service, and provider) and non-ECS advertisements
- Provides repository and interface to the following information:
  - Directory-level metadata (Product Advertisements)
  - Service descriptions and which products they relate to.
  - Provider descriptions for the data providers who give access to their products and services.
- Provides a server interface for infrastructure support for retrieving advertisements in order to submit service requests to the Science Data Server.
- New Features in Release B
  - Support for subscriptions on advertisements.
  - Linkage between Advertising Service to the Data Dictionary Service for definitions of terms.

**Reminder: This subsystem is on the incremental track development.**



# Software Architecture Overview



**Advertising Service (ADSRV) CSCI**



# COTS Selections

## COTS Used in Release A

- Sybase (v. 10) RDBMS, including Replication Server.
- Netscape Server

## COTS Used in Release B

- Sybase (v. 11) RDBMS, including Replication Server.
- WWW Server procurement still pending for Release B

## Status

- Evaluating Web Servers with SSL capabilities. Currently, a sole source prospect. Waiting for more products to emerge.

## Next Steps

- Participate in Release B Web Server procurement/ evaluation culminating in procurement in August 1996.

# IDR and Workshop Issues Summary



## Status

- **IDR Issues**
  - **Web server procurement for Release A - Participated in Web Server procurement for Release A, but lack of maturity of secure server technology was evident.**
  - **Security strategy for access privileges to advertisements. Current design is the use of proxy servers from secure Web environment to DCE environment.**
- **IDR RIDs**
  - **No Security on Install service (RID #17) - Project RID which response suggests that moderation be performed on the group level and advertisements from “unknown” providers be searchable but no software can be downloaded on install. Advertiser supports the Group concept, but the check will have to be added for no Install of ads within the “Other” group. Open.**

## Open Issues

- **GCMD - Advertising Service Relationship (see next slide)**

## Next Steps

- **Trade study and/or Prototype of GCMD to Advertising Service Interoperability**

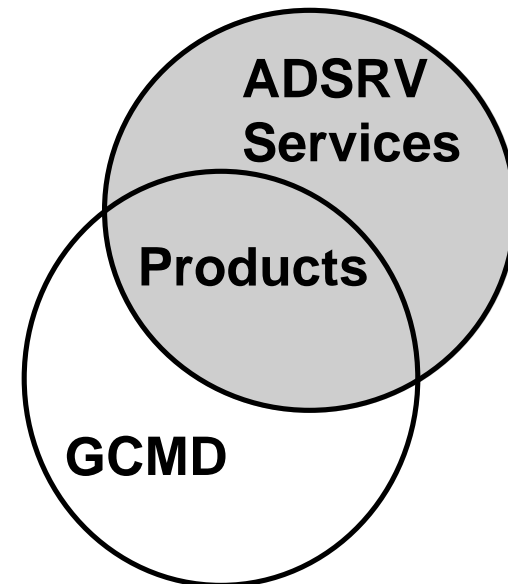


# GCMD - Advertising Service Release A Design



## Release A Implementation

- Advertisements for ECS Data will be sent to the GCMD
- GCMD would not send any DIFs (Directory Interchange Format) to ADSRV
- ADSRV would send external data provider information to GCMD.
- Release A client provides a link to the GCMD interface so users can search for other directory metadata that is not part of ADSRV.

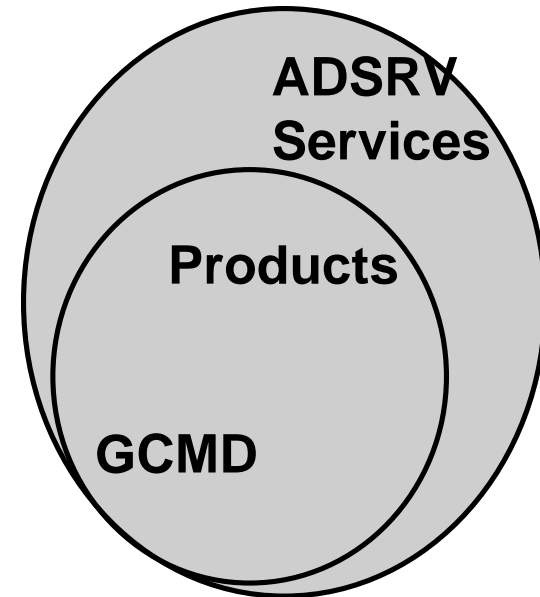


# Release B GCMD Interoperability Option 1 - Import/Export



## Import/Export

- Whenever GCMD receives a DIF, it exports it to ADSRV
- Whenever ADSRV receives a product advertisement, it exports it to the GCMD in DIF format.
- Potential problems with this approach:
  - Potential added effort for ECS and GCMD to review each ad that gets exported.
  - How to eliminate duplicates when someone enters something in the ADSRV and also in the GCMD?
  - Scalability of the size of the databases.

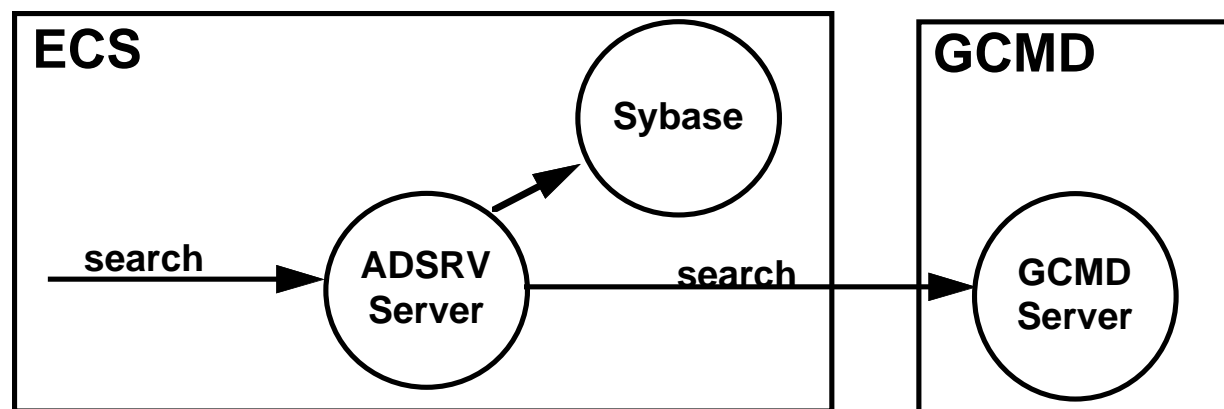
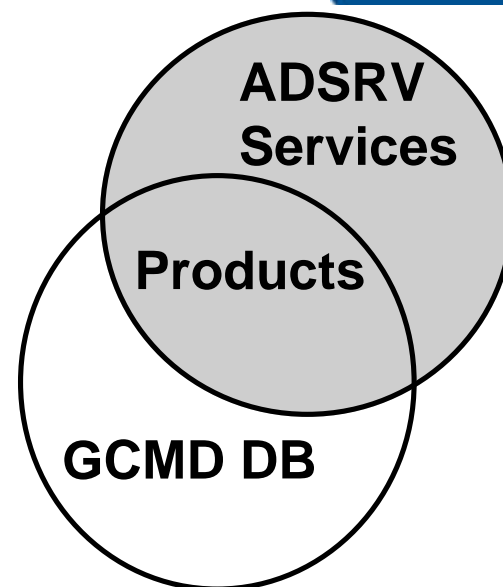


# Release B GCMD Interoperability Option 2 - L3 Interoperability



## Gateway or L3 Interoperability Option

- When someone searches the ADSRV, the ADSRV submits a search to the GCMD as well.
- Potential problems with this approach:
  - May get duplicate responses due to the data duplication that is present.
  - Keyword disjoints. Could use some DMS software to alleviate this problem.
  - Inconsistencies of result formats?
  - Response time.





# Key Mechanisms

**Mechanisms through which processes acquire or provide software services:**

- **Process Framework (PF)**
  - **Mechanism for incorporating infrastructures required to support distributed computing in the ECS environment**
  - **Provides process initialization and life cycle support**
  - **Sets parameters for naming/directory/security services**
  - **Interfaces to mode management, event logging, synchronous message passing.**
  - **Used for Advertising Application Server.**



# Key Mechanisms (Cont.)

- **Universal Reference (UR)**
  - Mechanism for referencing system wide data and service objects
  - Provides externalize and internalize services for objects.
  - URs for Advertisements provided.
- **Server Request Framework (SRF)**
  - Mechanism for constructing servers and client/server APIs
  - Provides asynchronous request processing service
  - Synchronous portion used in Advertising Application Server
- **Subscription Server (SS)**
  - Mechanism for implementing event-action model based on a producer/consumer paradigm
  - Provides subscription and event/action processing service.
  - Users and processes can find out when advertisements have been updated or inserted.

# 305 Errata



**Only Public Interfaces are described in the 305. Public interfaces being those objects used by other subsystems.**

**As such, some of the design presented today cannot be found in the 305.**

**Future Changes to Public Interfaces:**

- **Inclusion of more Product Advertisement keywords, such as Instrument, Platform, etc. to include the GCMD keyword set.**
- **Inclusion of signature type service descriptions, such as the required argument list, associated defaults, and valid values of arguments.**